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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,894	08/27/2003	Ermanno Filippi	9526-18	5103

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EXAMINER	
BHAT, NINA NMN	
ART UNIT	**PAPER NUMBER**
1764	

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,894	FILIPPI ET AL.	
	Examiner	Art Unit	
	N. Bhat	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, applicant has used narrative language when drafting the claim. Applicant should avoid "...under so called pseudo-isothermal" and recited positively recite --under pseudo-isothermal conditions--. Applicant is also requested to delete "intended for language" because whether applicant "intend to" do something or is not clear, positive or meaningful. Applicant is also encouraged to re-draft the claim to recite whether this is a method of using a particular heat exchanger within a reactor or whether this is just a method of reaction under pseudo-isothermal conditions. Applicant is strongly urged to re-draft the claim which recites all the steps of the method. In all of the claims applicant has used "characterized in that" language which renders the claim indefinite. Applicant is suggested to replace the "characterized in that language with --wherein--. Applicant is also encouraged to draft a separate claims for the reactor and heat exchanger and/or heat exchanger which is not dependent upon the method. From Claim 2-9, the preamble is incorrect, applicant recites a heat exchanger for the method, and the heat exchanger does not further limit the method for carrying out reactions in pseudo-isothermal conditions. Applicant is strongly encouraged to draft the method and/or apparatus in clear, positive meaningful language. If applicant is claiming a method, which includes a reactor, and heat exchanger which permits the pseudo-isothermal conditions for conducting a reaction the claims must be clear, positive and meaningful and the steps for conducting the

reactions should be specifically set forth as well as the operative connective relationship between the elements and the method steps. Suitable correction is required.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Filippi et al. EP 1 153 653 in combination with Haldor WO 90/09234.

Filippi et al. teach the invention substantially as claimed.

Filippi et al. teach a reactor for carrying out exothermic or endothermic heterogeneous reactions comprising an outer shell of substantially cylindrical shape and a heat exchanger (9) embedded in a catalytic layer (10) supported in the shell. The operation of the reactor as claim will provide first flow of a heat exchange operating fluid at predetermined inlet temperature and the fluid passing through the heat exchanger by feed into at least one heat exchanger and at one or more intermediate position of the

path. Specifically, Filippi et al. teach that the reactor can operate under isothermal conditions.[Note Column 1, lines 35-40 and Column 5, lines 5 et seq.] The feed to the heat exchanger is via duct 6.

However, Filippi et al. teach that the heat exchanger used in the reactor is a plate type heat exchanger. The heat exchanger taught in Filipi et al. includes the fluid distributor duct and a fluid collector connected to a central flow which is fluid communication with the reactor.

Haldor teaches an apparatus and process for exothermic reactions, the heat exchanger is embedded in a catalyst bed and the heat exchanger is a tube type heat exchanger. Haldor teaches that each cooling tube consists of fluid tight heat exchange outer tube coaxial with and surround and inner tube fitted in a fluid tight manner to the inlet of the cooling tube and defining an annular space being open at the outlet end of the cooling tubes the inner tube open at its inlet end and closed at the outlet end and being provided in its wall with a plurality of perforations through its length for direction of a stream of cooling a gas to the annular space an along the heat exchanging outer wall of the cooling tube.

It would have been obvious from reading combined teachings of Filippi et al. and Haldor to substitute the plate heat exchanger with the tube type heat exchanger used in Haldor in order to provide a method for carrying out in continuous pseudo-isothermal conditions because both Filippi et al. and Haldor teach providing a process of embedding a heat exchanger within a catalyst bed in order to improve the heat exchange efficiency inside the reactor and providing a smaller gradient of temperature

inside the reactor and to use to substitute the plate heat exchanger with a tube heat exchanger within the reactor would have been obvious to one having ordinary skill in the art as the function of the heat exchanger is equivalent.

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/0822,264. Although the conflicting claims are not identical, they are not patentably distinct from each other because both recited a method for carrying out in continuous pseudo-isothermal conditions in a predetermined reaction environment containing a catalytic bed a selected chemical reaction comprising the steps of providing at least one heat exchanger fed with a first flow of heat exchange fluid at a predetermined inlet temperature and feed into the heat exchanger at one or more intermediate position, a second flow of operating fluid. The difference between the instant invention and that of the '264 application is that in the instant invention the heat exchanger used in performing the method is a tube type heat exchanger wherein in the

'264 application the heat exchanger is plate type heat exchanger, to substitute one type of heat exchanger for the other would have been obvious as both heat exchanger perform the same step and effect the same result absent criticality in showing.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pagani et al. teach a method for in-situ modernization of heterogeneous exothermic synthesis reactor. Lee teaches a cross-flow fixed bed catalytic reactor which includes a heat exchange medium circulating indirectly through the catalyst bed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

N. Bhat
Primary Examiner
Art Unit 1764